

# Products

## Kolene Corp. Offers Investment Removal Process for Aluminum Castings

The benefits of salt bath leaching have long been recognized for cleaning ferrous and alloy castings, but Kolene Corporation's Kastech AL750 process for leaching ceramics from aluminum has opened new potential for more complex and sophisticated aluminum investment castings.

Using molten salt to leach silica-based shell and core residues, delicate aluminum castings can now be produced that were impossible to clean with mechanical methods alone.

While mechanical cleaning has been effective in removing much of the shell and core, salt bath leaching provides the final cleaning necessary to produce quality castings. The advantages of salt bath processing are amplified when cleaning aluminum castings that are susceptible to damage from aggressive mechanical cleaning. Cleaning aluminum castings with AL750 produces potential benefits on a number of different levels:

- More complex internal passages where ceramic residues have traditionally been a problem can now be produced, thereby expanding potential markets.
- Since salt bath cleaning is a simple immersion process, multiple castings can be processed at one time, effectively multiplying production throughput; this contrasts favorably with mechanical or water blast methods which are commonly one-at-a-time discrete operations.
- Salt bath leaching of aluminum parts provides a valuable new tool which allows cleaning process optimization between traditional sand and water blast, and final scavenging with molten salt. Each method can be used to its best advantage to optimize quality, throughput, and profits.
- Potential exists for purely chemical ceramic removal from extremely fragile castings where even controlled water

blast may cause unacceptable distortion and/or damage.

AL750 enables foundries to pour castings that couldn't be effectively cleaned before, at higher production rates, while providing improved quality and increased profit potential.

The size of the AL750 equipment is based on casting dimensions and required production throughput. Depending on the overall dimensions of the required process line, equipment ranges from small unitized equipment shipped on a common steel frame, to large discrete modules that are interconnected on site.

The basic unit consists of a salt bath furnace, by-product or sludge dumping zone, and rinse tanks. The multiple tanks are located under a common hood structure which is power-ventilated to contain any steam that is formed during the water rinsing of hot workloads.

Carley Foundry of Blaine, MN, installed a system on a space 30' long X 8' wide X 16' tall, with a usable work envelope about 2.5' long X 2.5' wide X 3'

deep. Work load capacity is 500 lb/hour gross (castings + fixture + ceramic).

President Mike Carley commented, "The Kastech AL750 process has improved our shell removal efficiencies and allowed us to win more complex casting work."

The investment casting facility reported a 60% reduction in per-piece manual blast times. Carley noted 20% of new business was directly attributed to the AL750 cleaning process. Total savings on parts processed in AL750 varies from 10-60%.

Kolene Corporation has been engineering and designing salt bath furnaces for nearly 70 years. The company is a recognized leader in providing surface cleaning and treatment technologies for components and materials. Kolene is a single-source supplier of process equipment & chemicals, aftermarket service, and ongoing technical support.

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Kastech AL750 system at Carley Foundry, Blaine, MN



For further information about Kastech AL750 or to arrange for complimentary sample processing of your aluminum castings, please contact Kolene Corporation.

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